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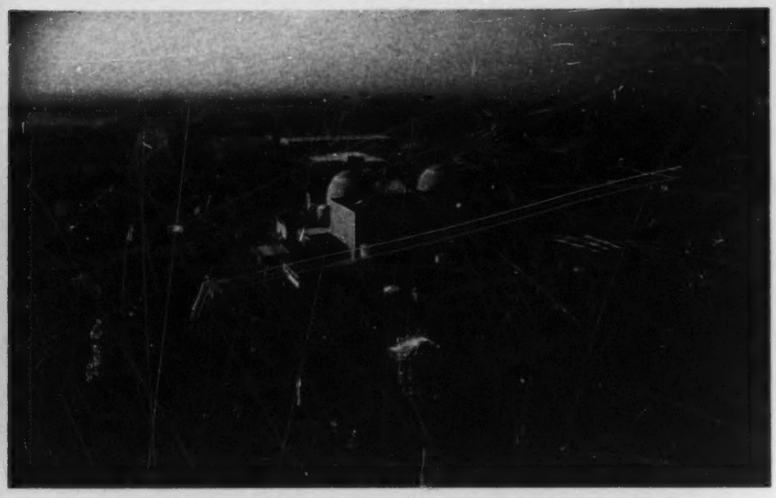

Focus on solutions to industry problems

Reverse osmosis, long used to remove inorganic materials from makeup water, in a technological turnaround now is used to remove organic materials at Virginia Power's North Anna nuclear station. Solutions to water problems are discussed in the Generation Focus Report, p.26. A T/D Focus Report on Brush Control technology begins on p.32.

No evidence PCBs lead to cancer: joint industry study

WASHINGTON—A new jointly sponsored study of biological data on the effects of polychlorinated biphenyls (PCBs) challenges the widespread belief that these substances are highly toxic to humans and can cause cancer.

The study was conducted by independent toxicology consultants from the University of Arkansas medical school. It was sponsored by the National Electrical Manufacturers Association, Chemical Manufacturers Association and the Utility Solid Waste Activities Group.

Research review

The consultants reviewed data obtained in previous research studies and concluded that the data do not indicate that PCBs are a probable cause of cancer in humans. Existing evidence, they say, is inadequate to confirm PCBs as being carcinogenic.

They report that epidemiological studies of worker populations that were highly exposed to PCBs have shown no consistent cancer increase that can be attributed to PCB exposure. The three consultants, Drs. Raymond D. Harbison, Robert C. James and Stephen M. Roberts, all of the division of interdisciplinary toxicology at the U. of A. medical school, conclude that PCBs are non-mutagenic—that is, they do not cause mutations in cells.

Animal studies reviewed by the consultant team show no more than limited, inconclusive evidence that PCBs cause cancer in animals, except in studies where highly chlorinated (60 percent chlorine) PCBs were used.

Sent to California Panel

A Scientific Advisory Panel established under California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) currently is reviewing candidate chemicals for possible regulation under the Act. The consultants' reports were furnished to the panel for consideration in its review of PCBs.

The letter forwarding the study to panel members states that "the evidence from animal studies does not justify regarding all PCBs as carcinogenic to humans." The letter went on to say that human health-effect studies "do not reflect any statistically significant human cancer effects resulting from PCB exposure."

The letter also cited other recent studies supporting the consultants conclusions. These include a study of environmental exposure to PCBs in New Bedford, MA, and a study of occupational exposure to PCBs from Hudson River sediment.

Copies available

Copies of the study, "Biological Data Relevant to the Evaluation of Carcinogenic Risks to Humans," are available from Dr. Douglas G. Bannerman, Environmental Consultant, NEMA, 2101 L Street NW, Washington, DC 20037.

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Transformers

SMUD for sale? PG&E, Duke may be interested

SACRAMENTO, CA—Sacramento Municipal District, one of the country's largest municipal utilities, is "exploring the issue of divestiture," and has corresponded with two of the largest investor-owned utilities, according to a SMUD spokesman.

Neighboring Pacific Gas & Electric Co. and Duke Power, headquartered in Charlotte, NC, are the two utilities that have expressed interest in SMUD or part of the California municipal.

SMUD is looking at alternatives to maintaining the *status quo*, including selling the entire system, because of mounting difficulties in dealing with a $1.4-billion debt and a troubled, non-operational nuclear power plant.

Controversy and questions have arisen, including the relative value of the idle Rancho Seco nuclear plant, regulations involving divestiture and SMUD's responsibility to the public it serves.

SMUD had solicited proposals and ideas from major organizations, including a half-dozen utilities, about buying, leasing or operating Rancho Seco. The response will be evaluated in a mid-October staff report to the SMUD board of directors.

And in June 1988, the question of whether or not to close Rancho Seco will come before district voters, put on the ballot by a local anti-nuclear group.

Package deal?

PG&E recently proposed purchasing SMUD facilities in a comprehensive package that includes permanently closing Rancho Seco, which represents generation capacity PG&E doesn't need, but is bound by contract, to buy until 1989 if the plant operates under SMUD. Rancho Seco has been closed since a December 1985 emergency shutdown.

SMUD is spending $120 million this year to restart the plant by January 1988. This investment is in addition to the $120 million a year normally required to maintain the plant, explained Kerry Shearer, a SMUD spokesman. Additional funds to increase plant efficiency also are slated for the 1988 budget, now being drafted, he said.

PG&E's consolidation offer

The PG&E proposal satisfies SMUD's objectives, suggested David Monfried, PG&E spokesman. But views differ on a number of points, including Rancho Seco.

The PG&E plan proposes to:

- Purchase all property and facilities for a set price, subject to negotiation. With more than 100 years of natural gas service to the Sacramento area, PG&E wants to expand electrical distribution to SMUD's 410,000 customers. PG&E now has about 3.9 million electric- and 3.2 million natural gas-customers in a territory covering most of northern and central California.
- Close Rancho Seco, which accounts for 54 percent of SMUD's generating resources. With its recent start of the Diablo Canyon nuclear units, PG&E has an excess of power generation capacity and does not need, nor want, the additional capacity that Rancho Seco could offer. Estimated decommissioning costs range from $600 million by SMUD to at least $220 million by PG&E, yet PG&E would shut it down.

"It's not economically sound to operate the plant, whether it's Duke, SMUD or anyone else," Monfried said.

Shearer said he didn't know if the differing opinion of the plant's usefulness would affect SMUD's views about the total PG&E proposal.

- Freeze electric rates for several years. This would be a definite bonus to Sacramento consumers, who have seen recent rate increases associated with Rancho Seco costs. Shearer questioned how a freeze could be guaranteed since the Public Utility Commission sets rates.
- Provide job security for current

Continued on page 17

Underwriters to pay $92-M to holders of WPPSS securities

NEW YORK—Four underwriters of now-defaulted bonds issued by the Washington Public Power Supply System have agreed to a $92-million settlement of a class-action suit. This is the first settlement in claims against WPPSS, underwriters of its debt and others involved in WPPSS' $2.5-billion default, the largest in history, in mid-1983. A number of other suits are pending.

The four lead underwriters who agreed to the settlement were Merrill Lynch & Co., Solomon Brothers Inc., Smith Barney, Harris Upham & Company and Prudential-Bache Securities, Inc.

The suit resulted when WPPSS defaulted on $2.25-billion of securities after cancelling construction of Units 4 and 5 in its ambitious nuclear program. Member public power organizations refused to honor agreements to pay WPPSS for the cancelled units under take-or-pay contracts after the Washington State Supreme Court ruled them invalid.

Bondholders sued on the grounds that they were misled by official statements about the risks inherent in the securities.

The settlement, which will consist of a payment of $80-million plus interest at 10 percent for up to 18 months, still must be approved by a federal court. After that, legal fees and expenses will be paid out before proceeds are distributed to bondholders.

A jury trial involving all remaining defendents is scheduled to begin in September 1988.

News Briefs

JILL MINNER, Assistant Editor

NIPSCO will propose holding company plan to shareholders

● According to Northern Indiana Public Service Company (NIPSCO), its board of directors has approved a plan to exchange common shares with a new holding company for NIPSCO and NIPSCO subsidiaries, and has also reinstated the common dividend. "The reinstatement of the common stock dividend has been a high corporate priority of the board of directors for many months," stated NIPSCO Chairman and CEO Edmund A. Schroer, "The board believes that major uncertainties affecting the company have been resolved, and is pleased to be able to take this step." Under the new holding company proposal, which will be presented to NIPSCO shareholders for a vote later this year, NIPSCO common shareholders would be solicited to exchange their shares for common shares of the new holding company on a one-for-one basis. If the plan is approved, NIPSCO said it would become a wholly-owned subsidiary of the holding company.

Niagara Mohawk's Nine Mile Point 2 begins supplying power

● New York State Electric and Gas Corporation reported that Niagara Mohawk Power Corporation's Nine Mile Point 2 nuclear power plant has started producing electricity. Nine Mile-2 was operating at about 15 percent of its total capacity when it first began supplying power, the utility said. Niagara Mohawk expects the 1,080-MW plant to begin full operation in early 1988.

UDI ranks Maine Yankee plant as lowest-cost producer in 1986

● A report conducted by Utility Data Institute, Inc. named Maine Yankee Atomic Power Company's Maine Yankee plant as the nation's lowest-cost producing nuclear power plant in 1986. Maine Yankee said its plant produced electricity at two cents a kilowatt hour, including funds for decommissioning and disposal of spent nuclear fuel. According to Maine Yankee President Charles E. Monty, 1986 was the best production year ever for the plant since it began operations in 1972.

Detroit Edison buys Pontiac territory from Consumers Power

● Consumers Power Company has agreed to sell its Pontiac electric distribution service territory to The Detroit Edison Company for $10.25 million, according to the utility. Under the agreement, Detroit Edison will serve the 7.5-square-mile area after operations have been transferred. Currently, Consumers Power provides Pontiac customers with electricity purchased wholesale from Detroit Edison. Consumers Power said its natural gas customers in Pontiac will be unaffected by the sale.

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EL&P readers whose responsibilities include both Generation and Transmission Distribution receive both technology sections. Other readers receive the technology section that applies to their respective area of responsibility. The Generation edition is indicated by a single dot (•) in the upper right corner of page 1; the T/D edition carries two dots (••). All readers receive EL&P's industry news section.

Consumers Power phases out capacitors containing PCBs

● Consumers Power Company announced that it has phased out pole-mounted electric capacitors containing polychlorinated biphenyls (PCBs) more than a year ahead of the Environmental Protection Agency's (EPA) October 1, 1988 deadline. "The completion of Consumers Power Company's PCB capacitor phaseout program 14 months ahead of EPA's schedule is part of our continuing effort to minimize the presence of PCBs in our electric distribution system," said Rann C. Lincoln, vice president of distribution operations for the utility. As of August 1, 1987, the company said it replaced approximately 11,000 of the capacitors from its 27,800-square-mile overhead electric system. Consumers Power began its accelerated capacitor replacement program in 1983.

WE signs letter of intent to purchase Presque Isle power plant

● Wisconsin Electric Power Company (WE) has signed a letter of intent with The Cleveland-Cliffs Iron Company to buy the Presque Isle power plant and related facilities for $247.5 million, according to the utility. "Adding the Presque Isle plant to our system will give Wisconsin Electric more flexibility in meeting customer demand for electricity," stated WE Chairman Charles McNeer, "And, because this purchase of an operating power plant is less expensive than new construction, we'll be able to continue to provide low-cost energy in years to come." WE expects to close the sale of the 600-MW coal-burning plant by the end of the year.

NRC authorizes full power license for Beaver Valley Unit 2

● The Nuclear Regulatory Commission Office of Nuclear Reactor Regulation has granted Duquesne Light Company a full power operating license for Unit 2 of its Beaver Valley power station. At full power, NRC said the unit will have an electrical output of approximately 836 megawatts. Other owners of the power station include Cleveland Electric Illuminating Company, Ohio Edison Company and Toledo Edison Company.

ICC denies second ComEd request for rate freeze settlement

● The Illinois Commerce Commission (ICC) has again denied Commonwealth Edison's request for a rate freeze settlement agreement, voting 4-3 not to relitigate the case. Edison's rate freeze proposal called for a one-time net average cost increase of 9.6 percent, followed by a minimum five-year freeze on additional rate increase requests. The utility had also proposed a traditional 27 percent rate increase which, Edison said, it may be forced to pursue.

CL&P plans to pursue divestiture of gas business

● Northeast Utilities announced that its affiliate, The Connecticut Light and Power Company, is pursuing a voluntary divestiture of its gas business in order to avoid being in conflict with the Public Utility Holding Company Act of 1935. Philip T. Ashton, senior vice president and general manager-gas group, explained that once the work plan is developed, and if no significant feasibility complications arise, actual divestiture probably would take two to four years to accomplish. He added that the present management of the gas group will remain the same.

Potomac Edison's computer classroom visits service areas

● As part of an economic development program, Potomac Edison Company's new mobile computer classroom is traveling throughout the utility's service territory to demonstrate the possibilities of computer-interactive instruction. The van, equipped with 28 Apple IIGS computers, the Digicard Classroom Network and Imagewriter II printers, was created in response to the results of a report conducted by the National Task Force on Educational Technology. "Research shows that computer-interactive instruction conveys ideas to students better than traditional blackboard instruction," stated Potomac Edison Coordinator Todd Stockslager, "Schools can use this computer network as a teaching tool for any subject matter, and it's an innovation that educators and communities will become excited about once they see it in use." Joint sponsors of the van include Apple Computer and Major Educational Resources.

EIA: more oil imports, nuclear use due in '88

WASHINGTON—U.S. dependence on foreign oil will increase in 1988, reaching the highest level since 1980, as domestic crude oil production continues to decline, according to the Energy Information Administration's (EIA) latest *Short-Term Energy Outlook*.

Net imports will reach six million barrels per day in 1988, a 6-percent increase over the predicted 1987 rate of 5.6 million barrels per day. Utilities, though, will produce 1.16 quadrillion Btu from oil in 1988, 11 percent less than the projected 1987 figure of 1.3 quadrillion Btu, the organization said. (See table.)

Total U.S. Energy Consumption in Quadrillion Btu

Source	1979 Q	%	1986 Q	%	'87 proj. Q	%	'88 proj. Q	%
Petro.	37.1	47	32.2	44	32.3	43	32.4	42
Gas	20.7	26	16.5	22	16.4	22	17.1	22
Coal	15.0	19	17.3	23	17.5	23	17.9	24
Nucl.	2.8	4	4.5	6	5.0	7	5.3	7
Hydro.	3.1	4	3.4	5	3.3	5	3.5	5
Other	0.2	*	0.2	†	0.2	†	0.2	†
TOTAL	78.9	100	74.1	100	74.7	100	76.4	100

* Less than 0.2 percent
† Less than 0.3 percent

(Source: EIA's *Short-Term Energy Outlook*.)

Utility segment

Utilities will use 3 percent more coal for generation in 1988, 2.81 quadrillion Btu compared to 2.73 quadrillion Btu projected for this year. Nuclear electricity production will increase by 6 percent in 1988 to 5.32 quadrillion Btu, up from a projected 4.98 quadrillion Btu this year. Gas will drop from the 1987 figure of 2.8 to 2.73 quadrillion Btu in 1988. Hydroelectric and other sources increase slightly from the 1987 level of 0.27 to 0.28 quadrillion Btu in 1988, the report said.

EIA also expects crude and petroleum product stocks to drop by 29 million barrels during 1987, but to remain stable at the end of 1988. Total petroleum demand, in 1988, will level off at about 16.4 million barrels per day.

March report

These figures are in line with a March report by Energy Secretary John S. Herrington, which predicted oil imports would reach 8- to 10-million barrels a day in the 1990s. More than 40 percent of U.S. energy now comes from oil.

More coal, nuclear consumption

Other findings in the EIA outlook include the following:

- With the increased residual fuel oil prices, the sharp rise in residual fuel demand in 1986 is already reversing itself in 1987, and a decline of 200,000 barrels per day is projected for the entire year. Most of the drop is in the electric utility sector, said EIA, with further losses expected in 1988.
- Eleven nuclear units, starting operation in 1987 and 1988, are expected to increase the nuclear share of electricity generation to 19 percent in 1988, with total generation increasing by 2 percent this year and 2.5 percent in 1988.
- U.S. energy consumption in 1988 could reach the highest level in nine years at 76.4 quadrillion Btu, compared to 78.9 quadrillion Btu in 1979. Petroleum, however, comprised 47 percent of 1979 consumption compared to 42 percent for 1988. Coal and nuclear power accounted for 22 percent of energy consumption in 1979, but more than 30 percent as projected for 1988.

Copies of the report

Copies of the *Short-term Energy Outlook* are available from the U.S. Government Printing Office or through EIA's National Energy Information Center (NEIC), Room 1F-048, Forrestal Building, Washington, DC, (202) 586-8800.

Utility efficiency drops, according to NARUC report

WASHINGTON—All but two of the top 113 investor-owned utilities were less productive in 1985 than in 1972, according to a recent report from the National Association of Regulatory Utility Commissioners (NARUC).

NARUC's *Electric Utility Performance Study 1972-1985* is based on 14 years of data electric companies have provided the Federal Energy Regulatory Commission.

In three sections, the report ranks financial performance, percentage change for customer rates and productivity for the 113 largest electric utilities in the country. (See tables.)

Although total productivity has gone down, "The financial health of the industry has improved each year since 1980," according to Michael Foley, director of financial services and author of the report. Foley said utilities recently have seen more cash earnings each year, along with a stabilization of rate increases.

The widespread drop in productivity still is a major cause for concern, Foley suggested.

Productivity changes were based on an index called Total Factor Productivity (TFP), calculated by dividing kilowatthours sold by a series of inputs, such as invested capital, fuel, labor and purchased power.

The TFP index measured the change in productivity over the 14-year period, not actual productivity. This means that the highest-ranked firm may have started the study period at a much lower productivity level, so its actual productivity could be less than lower ranked companies. Similar observations may be made about the firms with the greatest decrease in productivity.

Using this measure, the study concludes that just two companies increased productivity, while all others decreased between 2.4 percent and 58.7 percent. Central Power & Light Co. and Otter Tail Power Co. showed gains, while Portland General Electric Co. had the largest decrease.

The decrease of productivity over the past decade is cause for alarm and a topic for more research, said Foley. Means of increasing productivity, such as greater efficiency and lower construction costs, are vital, he suggested.

Strongest financial performers

Company	Rank
Wisconsin Electric Power	1
Wisconsin Public Service	2
Black Hills Power & Light	3
Southern Indiana Gas & Electric	4
Iowa Southern Utilities	5
Louisville Gas & Electric	6
West Pennsylvania Power	7
Hawaiian Electric	8
Southwestern Electric Power	9
Wisconsin Power & Light	10

Weakest financial performers

Company	Rank
Detroit Edison	113
Western Mass. Electric	112
Philadelphia Electric	111
Boston Edison	110
Alabama Power	109
Consumers Power	108
Kansas Gas & Electric	107
Jersey Central P&L	106
Savannah Electric & Power	105
Commcnwealth Edison	104

Financial performance was based on 10 indicators which emphasize the relative importance of the firm's cash flow. The indicators include: long-term debt ratio, return on equity, pre- and post-tax interest coverage ratio and Allowance for Funds Used During Construction (AFUDC) divided by net income. Foley explained that the higher the ratio of non-cash earnings, the weaker the company is.

According to the model, the utility ranked first for financial performance over 14 years was Wisconsin Electric Power Co., while the weakest was Detroit Edison.

The study compiled tables ranking rates charged to residential, commercial and industrial customers, overall average retail rates, average revenue per kwh during each year and the percentage of rate increases from 1980 to 1985 and from 1972 to 1985.

Residential users of the average electric utility experienced rate increases of approximately 220 percent over 14 years compared to a 157-percent increase in the consumer price index.

The highest residential rate increase over the 14 years was attributed to San Diego Gas & Electric Co. at 445 percent; the lowest was Montana Power Co. at 89 percent.

Copies of the 69-page study are available for $30 each from NARUC, P.O. Box 684, Washington, DC, 20044.

Highest Resid. Rate Increase

Company	% Inc.	Rank
San Diego Gas & Electric	445.2	1
Long Island Lighting	363.3	2
Houston Lighting & Power	361.4	3
El Paso Electric	360.7	4
Nevada Power	349.3	5
Central Hudson G&E	347.6	6
United Illuminating	336.5	7
Florida Power & Light	331.9	8
Orange & Rockland Utilities	321.1	9
Jersey Central P&L	307.3	10

Lowest Resid. Rate Increase

Company	% Inc.	Rank
Montana Power	89.1	113
Southern Indiana G&E	107.7	112
Minnesota Power & Light	112.4	111
Otter Tail Power	124.9	110
Indianapolis P&L	129.3	109
Idaho Power	130.0	108
West Penn Power	131.0	107
Monongahela Power	132.1	106
Iowa Southern Utils	132.9	105
Northern States Power	136.1	104

Greatest Increase in Total Factor Productivity

Company	% Inc.	Rank
Central Power & Light	+7.2	1
Otter Tail Power	+0.5	2
Southwestern Electric Power	-2.4	3
Bangor Hydro Electric	-4.0	4
West Texas Utilities	-5.3	5
Long Island Lighting	-7.7	6
P.S. of New Hampshire	-9.0	7
Illinois Power	-9.4	8
Central Maine Power	-9.8	9
Kentucky Power	-14.5	10

Greatest Decrease in Total Factor Productivity

Company	% Inc.	Rank
Portland General Electric	-58.7	113
Central Illinois Light	-55.8	112
Ohio Power	-55.5	111
Northern Indiana P.S.	-54.8	110
Duquesne Light	-53.8	109
San Diego G&E	-52.6	108
Indiana & Michigan Elec.	-50.5	107
Madison Gas & Electric	-50.2	106
Pacific Power & Light	-50.1	105
Nevada Power	-49.8	104

(Source: NARUC's *Electric Utility Performance Study 1972-1985*.)

NIPSCo gets OK for foreign financing

HAMMOND, IN—The Indiana Utility Regulatory Commission has approved Northern Indiana Public Service Company's request for permission to enter into a $70-million 5-year revolving underwriting agreement with a consortium of foreign banks.

The company will use the facility to cancel a similar loan agreement that would have matured next year.

Approval of NIPSCo's proposal allows the company to make full use of a $155-million revolving underwriting facility completed earlier. The earlier 5-year facility will be used to issue short-term notes in the European commercial paper market.

Editorial

Clean coal vs. scrubbing: Costly clean air Catch 22

The NOW generation of organized environmentalists is pushing hard to get stringent revisions to clean air legislation through Congress this fall. The goal is to reduce acid rain substantially, using current technologies. This means more scrubbers to remove more SO_2 from stack gases *after* combustion.

It also means utilities could see the present $10-billion tab for emission cleanup double over the next few years, and continue to climb thereafter.

Utilities, and others, favor cleaning the coal *before* combustion to eliminate not only the sulfur by-products, but other undesirable materials that contribute to acid rain, such as oxides of nitrogen, as well. Unfortunately, coal-cleaning technologies, while well-known generally, just are not commercially available today. Still, utility management contemplating the potential benefits of coal cleaning consider scrubbers to be technological dinosaurs, doomed to extinction. These coal-cleaning advocates would like to postpone further investment in scrubber technology because if coal-cleaning methods can be brought to commercial status in the next decade or so, none of today's scrubbers will be needed. This would reduce capital requirements and, ultimately, the cost of electricity to customers.

With the Senate likely to vote on a rewrite of the Clean Air Act before yearend, and the House working on its own version of acid-rain reduction legislation, it's no surprise the controversy is really heating up.

Utilities and other coal users find themselves in the unenviable position, again, of appearing to care less for the environmment and the people who must live there, than about their profits.

If utilities hold out for coal cleaning because it offers promise of eliminating both sulfur *and* nitrogen oxides, and reducing customer costs as well, they're accused of wanting to maintain the status quo because they don't care enough about their customers' health and well-being to spend money now to clean the air. That the recent report of the utility-industry's acid-rain monitoring program (see p. 20) indicates no change in acidity of rainfall in the east and midwest over the past seven years is not likely to be accepted by environmental groups as being anything but a self-serving exercise. Utilities, environmentalists would argue, are stalling.

Besides, say environmentalists, who knows if coal cleaning will *ever* be a practical, effective technology. What would happen if nothing is done to further clean up the air we breathe, and 20 or 30 years downline even utilities should be forced to admit that coal cleaning technologies don't work? Better, they say, to address the problem now, with today's tools, and begin to make some progress toward cleaning up the mess utilities and industry have created. (Isn't it interesting so little is said about the automobile's role in creating polluted air?)

The only alternative to scrubbers today, as everyone knows, is to burn low-sulfur coal. But most low-sulfur coal is mined in the West and is difficult, time-consuming and expensive to transport, and can't be burned in just any boiler without expensive modification. In addition, even low-sulfur coal burning may not be sufficient to meet new Clean Air Act requirements after Congress gets done with its rewrite of the legislation. Moreover, a more concerted switch to low-sulfur coal could contribute to massive unemployment in Eastern high-sulfur coal areas, which could be unacceptable to Congress.

So it would appear that if more stringent Clean Air legislation is passed, the only viable approach may be to require more scrubbers..and more investment.

Catch 22 arises because only large-scale R&D effort can ultimately bring coal cleaning to commercial status. The federal government could provide as much as $3- to $4-billion, but federal clean-coal R&D money must be matched by industry R&D investment. In order for it to become available, coal users and others will have to come up with their share. But if utilities and other coal users must invest huge sums in more and better scrubbers to meet more stringent clean air standards, there will be little money available to invest to bring about the long-term benefits of coal cleaning that could make scrubbers, and their costly annual financial drain of utility funds, unnecessary.

With few new power plants to be built in the next five years, we have an unusual opportunity to continue the air cleanup activities already started and to accelerate coal-cleaning R&D activities. Hasty Congressional action to rewrite the Clean Air Act, strengthen emission limits and force greater use of scrubbers, would be counterproductive and effectively shut off any possibility of bringing about the greater benefits coal cleaning could provide.

Robert A. Lincicome, Editor-in-Chief

Letters

Anti-noise technology

Your article on anti-noise technology ("Can anti-noise technology solve noise problems," August *EL&P*, p.32) discussed only the work of Noise Cancellation Technologies, Inc. There are a number of people working on this technology in the U.S., including Nelson Industries, of Stoughton, WI; General Motors Research Labs, Warren, MI; Applied Acoustic Research, State College, PA; Gulf Oil Corp, Pittsburgh, PA; and the University of Houston, Houston TX; as well as ourselves at Angevine Acoustical Consultants, Inc. A number of others are working on it abroad.

We have been engaged in research funded by Niagara Mohawk Power Corp. on cancelling the hum of transmission transformers since 1976 and demonstrated such cancellation to NMPC in April 1982, and to some members of ESEERCO (Empire State Electric Energy Research Corporation) in November 1982. We recently have been awarded a contract by EPRI to continue this research and to produce a prototype system.

Cancellation of noise from a large complex source, like a transformer, over more than a singular point requires a number of channels of cancellation that are designed to work together while providing different cancellation signals on each channel. We do not believe that NCT has developed a multi-channel system capable of doing this, nor that they have demonstrated this capability. So far as we know, we are the only firm currently working on the cancellation of transformer hum to have demonstrated this multichannel capability.

O.L. Angevine, P.E.
President
Angevine Acoutstical Consultants, Inc.
East Aurora, NY

Ed. note:

EL&P was unaware of the work done by Angevine Acoustical Consultants. We subsequently have learned that the company has signed a $375,000 contract with EPRI to produce an active system to cancel transmission transformer hum, essentially cancelling sound with sound. This will further the work previously funded by Niagara Mohawk Power, which will continue to provide support for the new effort. Others participating in the project are Technical Design Corp., Manlius, NY; Rushden Consulting & Research, Baldwinsville, NY; and Product Development Services, Fairfield, CT. We anticipate reporting more on this development effort in a future issue of *EL&P*.

Replacing URD cables

The article in the August issue titled "Time, cost of replacing URD cables can be reduced" states that we use the cable follower for replacing underground residential distribution cables. It is the GuideDrill, and not the cable follower, that we have used and are continuing to use for cable replacement.

The cable follower, in my personal opinion, is now an obsolete tool.

Robert N. Wells, Jr.
Jersey Central Power & Light Co.
Allenhurst, NJ

GPU recovery

After reading your editorial in th August issue of *Electric Light & Power* I write to express my personal appreciation, and that of the 13,900 employees of the General Public Utilities System, for the thoughtful perspective you presented in "GPU has done much more than survive the TMI-2 crisis."

You clearly recognized the progress GPU has made. Indeed, the GPU system is much stronger as a result of the TMI experience. And, just as important, we never backed away from our obligation to serve.

The industry is changing, and GPU is positioning itself for the challenges of deregulation and competition. Because of the testing experience of TMI and its aftermath, we are ready for the future.

Again, thank for recognizing the broader significance of GPU's recovery.

William L. Gifford
Vice President
GPU Service Corporation
Parsippany, NJ

August Top 100

Just to set the record straight, United Illuminating is not "a newcomer to the system heat rate leaders" as stated on page 20 of Mr. Minner's interesting and always eagerly awaited article (The Top 100 Electric Utilities' Operating Performance, August 1987 *EL&P*).

While UI's 8th place ranking in this year's listing marks a return to the Top 10 systems that we barely missed with an 11th place finish last year, we are very proud of the fact that UI has consistently been ranked high in the Top 10 for system heat rate efficiency since 1981. According to our records,

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Electric Light & Power

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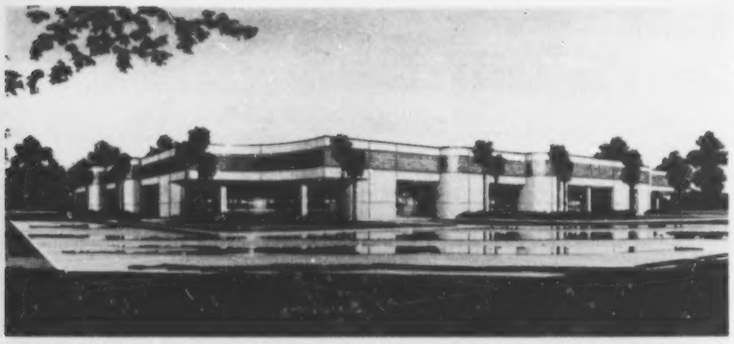

GPU opens tech training center

General Physics Corporation (GPU) has opened a new center in Tampa, FL for training maintenance technicians. Housed in GPU's Tampa Training Center are classrooms, offices and professional training laboratories. The laboratories include a circuit breaker lab, a protective relays lab, an industrial watthour meters lab and a multi-purpose lab. GPU said its programs can provide training to companies that do not have enough personnel available for on-site courses, or to organizations that need specialized training for a small number of people.

TMI-2 funding coming to an end

PARSIPPANY, NJ—Jersey Central Power & Light Co. received permission from the New Jersey Board of Public Utilities to reduce its retail rates to reflect the end of collection of funds for cleanup of Three Mile Island Unit 2.

But the commission rejected the JCP&L proposal to start collecting for the eventual decommissioning of TMI-2. The BPU said it had determined that the cost of decommissioning was a recoverable expense, but that the utility should not ask for the increase in base rates yet.

The retail rate reduction will be $13.6 million, or about 1.1 percent. It was expected to have no impact on the company's earnings.

JCP&L filed for a net rate reduction of $12.1 million, reflecting the $13.6 million reduction for cleanup funding and a $1.5 million increase to fund the decommissioning of TMI-2.

The BPU first approved customer participation in funding the cleanup in 1982. Jersey Central collected about $13.6 million a year under that approval, for a total amount collected of $61.25 million.

The regulatory agency also adopted performance standards that apply to the Oyster Creek Station and Three Mile Island Unit 1. The standards establish a system of rewards and penalties that are determined by the combined average annual capacity factor of Oyster Creek and TMI-1.

If the two units reach a capacity factor of 40-60 percent, the utility will be penalized with a disallowance of 20 percent of the replacement power costs. If they achieve a capacity factor of 80 percent or above, it will be rewarded with an additional 20 percent of replacement power costs.

Top 100 report correction

GPU. The heat rate listed for General Public Utilities was only that for its nuclear facilities. Total system heat rate, for all fuels, should have been listed as 10,547, which would have put the company in 43rd position among the Top 100 utilities.

GPU figures for transmission mileage appearing in the August Top 100 report were in error. GPU had 2120 circuit miles of 189 kV or higher rated lines in operation at the end of 1986, not 1868 as published. It was operating 4435 circuit miles of lines below 189 kV, instead of the 3985 shown in the table. The additions during 1986 also were listed in error, totalling 33 and 8 for the two ratings, respectively.

DECo. Transmission mileage figures were incorrectly listed. For lines rated 189 kV and above, figures published as circuit miles actually were *pole* mile distances, which were subtracted from actual *circuit* miles listed in the 1986 Top 100 report and erroneously showed reductions. DECo in 1986 operated 968 circuit miles of transmission lines rated 189 kV or above, the same as a year earlier. Circuit miles of transmission rated below 189 kV and above 22 kV were 4441, up 17 miles from a year earlier.

Letters . . .
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your survey has us ranked as follows in recent years:

Year	Rank	Btu/kWh
1981	5	10,066
1982	4	9,979
1983	3	9,909
1984	5	9,956
1985	11	10,054
1986	8	9,934

As we've noted in a press release concerning the survey rankings and results, the primary reason for last year's slight decline to 11th place was UI's different and more diversified energy fuel mix achieved during 1985 when we successfully converted our Bridgeport Harbor Station Unit 3 from oil to coal, providing substantial customer savings and a significant reduction in UI's previous oil dependency.

Thanks for your usual fine job and an outstanding publication. We appreciate the chance to set the record straight.

Jack C. Dolan
Manager—Public Information
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